

The parallax of  $\pi^4$  Orionis is found to be  $+0.012'' \pm 0.007''$ , and in the cases of  $\psi$  Orionis and S Monocerotis negative parallaxes result from the measures.

THE PARIS OBSERVATORY.—M. Baillaud's report for the year 1910 contains a record of a great deal of work successfully accomplished, and, besides, gives interesting accounts of several ingenious instrumental devices. The ordinary astronomical work was carried on as usual, but, together with the observations of Halley's comet and other special observations, was greatly interfered with by the unfavourable skies at Paris.

The distribution of time signals by radio-telegraphy took place regularly after May 23, 1910, and on November 23, and subsequently, a signal was sent at 11 a.m., as well as at midnight as previously. A brief account of the installation for this purpose is given.

THE LONGITUDE OF THE RED SPOT ON JUPITER.—In a communication to the *Astronomische Nachrichten* (No. 4498), the Rev. T. E. R. Phillips records his observations of the Red Spot on Jupiter during the present apparition. These show the remarkable fact that the longitude of this feature has diminished by approximately  $30^\circ$  in the unprecedentedly short time of ten months. While in June last year the zero meridian of system ii. practically bisected the hollow, the longitude on April 13 and 16 was but slightly more than  $330^\circ$ .

MEASURES OF DOUBLE STARS.—Lick Observatory Bulletin No. 190 contains the measures of 159 double stars made by Mr. C. P. Olivier. The paper is the fifth of a series on double stars lying south of the equator, and sixty-one of the present objects are south of  $-30^\circ$  declination; twenty-four new pairs are included. The bulletin also contains a table displaying Mr. Olivier's personal equation with respect to Messrs. Aitken and Hussey.

### THE BRITISH SOLAR ECLIPSE EXPEDITION.<sup>1</sup>

TO continue the hospitality which had been showered on us, Mr. Mills placed a large customs steam launch at our disposal, and the same afternoon took us for an impromptu cruise about the beautiful harbour, Mr. Hedley, the assistant curator of the Sydney Museum, accompanying us. Unfortunately, however, at about 4.30, while steaming up Middle Harbour, we piled up on a sandbank on a falling tide, and it was not until 7.30 that we were able to float off. As we did not arrive back to the hotel until 9 o'clock, our trip to the capital site had to be postponed until next morning. Mr. Hunt had already sent numerous telegrams and secured tickets and sleeping accommodation in the train, but these were generously replaced by others available for the following day. The next morning (March 21) Mr. Hunt showed me the screens on the wall of the Sydney Post Office, in which were exposed the meteorological forecasts. These seemed to be very popular, judging by the number of people I saw closely examining them whenever I passed by. Then he showed me the meteorological department at the observatory. The view from the tower of this observatory is magnificent, and as I had my panoramic camera with me I took views all round. From an astronomical point of view the observatory is very hampered, for on three sides it is surrounded by closely packed buildings, rendering the atmosphere very smoke-laden. The afternoon was spent in motoring in the vicinity of Sydney, and very fine views of the country were obtained. In the evening Mr. Hunt and I left for the capital site. To reach this region we had to make a night railway journey, arriving at Queanbeyan at 4.30 a.m. At the hotel there we turned in until 8 o'clock, and then started away in a two-horsed vehicle for the surveying camp, which is situated on the site of the future capital. This meant a drive of eight miles over a somewhat rough road, but this road is in progress of betterment every day. At this camp we were received by Mr. C. R. Scribner, the chief Commonwealth surveyor, who has the whole Commonwealth territory for surveying purposes in hand. In his offices we were shown contour maps of the whole region, the sites for the water supply,

railway, &c. He had in process of making some model relief casts made accurately from the contour maps, and these were being coloured before dispatching them to the various world centres for competition. The competition consists of suggestions for the best arrangement for a "model city," and I believe a valuable prize will be awarded to the winner. Mr. Scribner has a nice little meteorological station in good working order near the camp site.

After lunch we drove a distance of about  $6\frac{1}{2}$  miles to the foot of a hill called Stromlow. This hill is 600 feet above the plain below, and its summit is 2600 feet above sea-level. It forms a kind of "Hog's Back" in a north and south direction, the land falling rapidly away on both sides. The eastern horizon is well open, so that solar observations can be made just after sunrise. The observatory site reminds one rather of that chosen for the Solar Physics Observatory at Fosterdown, Caterham, but, of course, on a very much larger scale. As the nearest town to the Stromlow hill will be the capital site,  $6\frac{1}{2}$  miles away, and as the latter will be on the leeward side of Stromlow in relation to the prevailing winds, the observatory cannot be rendered ineffective at any reasonably near date. Further, a very large reserve of land all round the hill has been set apart for protective purposes. Both on this and on the hill gum trees are in their thousands, but most of these have been ring-barked, and are therefore dead. The planting of other and quicker growing trees is now going to be undertaken, so that radiation from the ground will be reduced to a minimum. The result of my visit was that I was highly pleased with the site, and Mr. Hunt assured me that the weather conditions all the year round were of the best. The following is the brief report I sent to the Minister for Home Affairs with respect to the Stromlow site:—

AUSTRALIA HOTEL,  
SYDNEY,  
March 23, 1911.

SIR,

Accompanied by Mr. H. A. Hunt, escorted over the site by Mr. C. R. Scribner, I have now had the opportunity of inspecting the proposed location of the future Solar Physics Observatory. I carefully surveyed the situation with respect to those main requirements which could be judged on inspection, and I feel sure that Stromlow will admirably serve the purpose for the site of a National Observatory such as is proposed.

In selecting a site for a National Observatory for the study of Solar Physics, it is most important that one should look a long time ahead, and that any site selected now should be as good a site in, say, 100 years' time. The Stromlow site seems to be admirably suited in this particular. Again, it is fundamental that the observatory should be situated at a high elevation, because definition for solar observations is best in the very early morning just after sunrise, and an unobstructed eastern horizon is imperative. In fact, solar physics observatories are now situated or are now being removed to high localities to secure these observing conditions, and this result is the outcome of considerable experience.

In the present instance Stromlow is well adapted in this particular, for it is 2600 feet above sea-level and 600 feet above the neighbouring plain, and has an open eastern horizon. The highest points of this site should be utilised for the solar instruments.

Further, the site is good with respect to the western and northern horizons, rendering the location as an observing station one of the highest order.

Another important desideration in the choice of a good site is that the northern, eastern, and western slopes are such that there need be little fear from defects arising from the presence of future buildings on them. On the southern side of the site the plateau is very well adapted for the erection of the main business buildings of the observatory, apart from the observing instruments.

The observatory should be a sufficient distance away from any large town in order to render the sky as little illuminated as possible in the neighbourhood of the observatory from artificial town lights; in addition, it should be situated on that side of the nearest town from which the prevailing winds blow in order to free the

<sup>1</sup> Continued from p. 429.

observatory site from the presence of driving town smoke. These two conditions are, I find, allowed for in the site in question, the Capital site being at a sufficient distance of  $6\frac{1}{2}$  miles from the locality and on the eastern side, the prevailing wind being from the north-west.

Another important favourable point in the position of the site is that the area is of sufficient dimensions for the accommodation of the necessary buildings for the observation and study of other allied branches of work, such as meteorology, astronomy, seismology, &c. In the case of magnetism, I would suggest that the observations should be made at another site very far removed, while their work of reduction should be accomplished in special quarters at Stromlow.

It is very important, further, in the light of modern research, that there should be a rapid means of communication between the head workers in all the above subjects, since the latter are so intimately associated with one another. The bringing together of the various departments into one locality is therefore of considerable value, for instant intercourse and collaboration of the work

who looks after this branch there. Mr. Macculloch kindly supplied me with all the necessary materials for collecting and preserving, and promised to pack our catch properly for dispatch to London as soon as it arrived at Sydney after the eclipse.

Friday, March 24, was spent in packing and saying adieu to many kind friends preparatory to going on board H.M.S. *Encounter* in the evening after seeing Mr. Hunt off by train to Sydney, and I should like to take this opportunity of thanking him for his extreme kindness to me and all of us during the whole time we were in Australia. In Mr. Hunt the meteorology of Australia is in good hands; he and his staff are working at problems of extreme interest, which will be to the benefit of Australia in particular and the world in general.

H.M.S. "*Encounter*," April 2.

Saturday, March 25, saw us steaming majestically out of the beautiful harbour of Sydney away to far-off Vavau, the scene of our future labours. The ship, with her two tall masts carrying the network of Marconi wires between their tops, and the three funnels sending out the tailings

of Newcastle coal, must have looked a pretty sight with the background of abnormal green grass and trees which studded the shores. On board were the two eclipse parties safe and sound, namely, Fathers Cortie and Pigot and Brother McKeon, and my party of Mr. McClean and Mr. Anderson, while safely stowed away below were the eclipse instruments and huts. On board also were some livestock, sheep, cocks and hens, and last, but not least, the ship's goat.

The first day out I erected the screen for the three self-recording instruments, which ought to have been used all the way out from Tilbury. Then I adjusted and started the instruments themselves, the screen being placed on the starboard side of the ship well forward of the funnels and against the conning tower. That evening I gave a lecture, having now lantern and slides, the object of which was to explain to the whole ship's company the kind of assistance they could render us both in the preparations

and during the eclipse. The lecture seemed to have attained its end, for the captain asked all those who were willing to assist to give their names in by six o'clock on Sunday, i.e. the next day. Not only did all the officers come forward, but 168 men handed in their names.

Sunday was occupied in preparing lists of the requirements of assistance at each instrument and for several parties, such as corona drawing, star observations, &c. When this was completed the captain handed it to the commander to portion off the officers and men for the several lines of work. In addition to the eclipse work, there were numerous volunteers for the "ologies," as the natural history branches were termed. Thus the captain, assisted by Staff-Surgeon Milln, volunteered to do the catching of the butterflies, moths, beetles, spiders, &c., and he stated that Mrs. Colomb (who is on her way to Vavau with other ladies, wives of the officers) was bringing him the killing bottle. Mr. Anderson has occupied himself with geological study preparatory to rock-specimen collecting. The collection of flowers, seeds, and especially fern seeds, will be undertaken by Lieut. Hunt Gruhl, while Mr. Lane, the purser's clerk, was posted by Mr. MacIlwaine, of the *Pegasus*, in the art of catching fish. Lieut. Clover will look after the birds and bats, &c., and will be assisted by Staff-Surgeon Milln in their prepara-

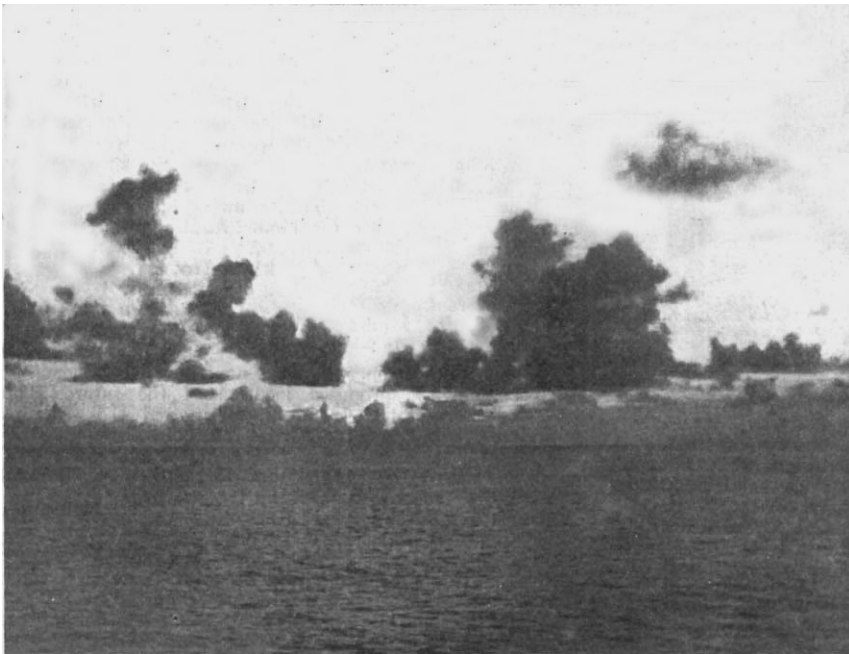


FIG. 1.—Evening Cloudscape in the Doldrums.

between the heads of departments can be most efficiently accomplished in this way. For such a large country as Australia this centralisation of work is, I think, the most economical and effective course to take.

Trust that this brief summary of the results of the inspection of the site may serve a useful end,

I have the honour to be, Sir,

Your obedient servant,

WILLIAM J. S. LOCKYER.

The Hon. King O'Malley,  
Minister for Home Affairs.

On the evening of March 22 Mr. Hunt and I left by train for Sydney, arriving there at 5 a.m. the next morning. After a short rest I went down to the wharf to see about the ten gallons of spirit which had arrived in the P. and O. steamship *Mongolia*, and had been forwarded by the British Museum authorities for use at Vavau for the preservation of the natural history specimens I proposed to have collected for them. A few days previously I had met Mr. A. W. MacIlwaine, of H.M.S. *Pegasus*, and he told me of the valuable fish collection he had made for the Sydney Museum on a previous cruise. He put me up to all the wrinkles of catching, and escorted me to the museum to introduce me to Mr. Macculloch,



tion. The Rev. Peshall has also volunteered to make a collection of shells, sponges, &c. Thus even if we are clouded out and do not get our astronomical observations, we hope at least to bring back some new material which may advance science in other directions.

On Tuesday, March 28, Father Cortie delivered a lecture on "Eclipses in General," while the following evening Mr. McClean was persuaded to describe and give his experiences on aeroplanes. In fact, we have all been most busy, and the ship has been rolling and pitching nearly all the time, and a stiff head wind N.E. has been blowing.

On March 31 we were invited to a concert given by the ship's company, which proved very successful.

Early this morning (April 2) we passed on our star-board side the islands of Tofua and Kao; both are volcanoes, the former active, but there were no signs of activity. Tofua lies in the centre of the eclipse track, but has not been looked upon as a suitable place for an eclipse station. On our port side we are now nearly abreast of Late Island, a lonely peak in this landless ocean. In fact, except for a very few birds and a few flying-fish, the ocean and air have been lifeless. The barograph is daily marking out the diurnal double oscillation superimposed on long waves of rise and fall. The temperature has been steadily rising, and has now reached the eighties. The hydrograph persistently records more than 80 per cent. of saturation, but on the moving ship this humidity is not very much felt except when violent exercise is indulged in. We are now in very quiet trade winds, and the good ship *Encounter* is becoming more steady. To-night, or rather this afternoon, we expect to arrive at our destination, and then we shall feel the effects of the temperature and humidity.

At the present moment no decision has been arrived at as to whether we shall live on board or ashore. Most probably it will be the latter. Our present intention is to occupy the spot indicated on the large-scale map of Vavau portioned off as a naval coaling station, for the harbour is sufficiently deep for the ship to lie just off. This harbour has only a very narrow entrance, so that the ship will be well protected from strong winds and landing will be easy.

To-morrow morning (April 3) will be spent in looking for a suitable site, and then on the following day the Union Steamship Company's mail boat arrives from Auckland, bringing the Australian astronomers and the other members of my party, namely, Messrs. Brooks, Raymond, and Winkelmann.

I have arranged with Captain Colomb that, should we be successful on the day of the eclipse, the ship will not leave Vavau until about May 5. The object of this is to give us plenty of time quietly to develop and copy all negatives; as the climate is so hot and humid, particular care must be taken to produce the best results, and it is quite possible that development may only be successfully accomplished during the cool (!) of the night. In the case of our being clouded out, Vavau will be left on May 2. On her return journey to Sydney, H.M.S. *Encounter* will make for Suva, Fiji, to coal, and to land Mr. McClean and myself there.

It is now 11.30 a.m., and two small patches of land ahead give us the first imprint of Vavau, our future home for some time to come. At last we are there after this long journey.

W. J. S. LOCKYER.

#### THE PRIVATE SESSIONS OF THE IMPERIAL EDUCATION CONFERENCE.

IN our review of the public sessions of the conference (see NATURE, May 4), we hoped that the report of the private sessions would reveal a useful interchange of ideas between the delegates from various parts of the Empire, and that organised concerted action would result. The report (Cd. 5666, price 1s.) issued by the Board of Education is now before us, and we may state at once that it disposes of the fear—to which the character of the public meetings naturally gave rise—that the Colonial Governments had not been duly consulted with reference to the agenda of conference. Furthermore, we believe that the debates have been of a useful character, and that an

important step has been taken to fulfil our aspirations by the organisation of an Imperial Education Bureau. The agenda of the meetings may be summarised as follows:—(1) action arising from the previous conference in 1907; (2) memoranda prepared by the Office of Special Inquiries and Reports on schools in the self-governing dominions; (3) training and qualifications of teachers; (4) cost of instruction and cost of living in connection with advanced technical colleges and universities; (5) the Board's examinations in the overseas dominions; (6) the formation of an Imperial Education Bureau.

Two mornings were devoted to problems of an educational, rather than administrative, character. English spelling and spelling reform formed the subject of papers by Dr. E. H. Edwards (H.M.I., England) and Dr. A. H. Mackay (Nova Scotia); also Dr. W. J. Viljoen (Union of South Africa) contributed interesting information with reference to the simplification of Dutch orthography and grammar. H.E. the Governor of Sierra Leone submitted a paper, written by R. F. Honter, on the psychology of the negro child and on the adaptation of primitive customs, manners, laws, and traditions in a system of education. Sir F. D. Lugard, Governor of Hong Kong, presented a memorandum on the best methods of training character and inculcating a high moral standard in universities founded primarily for non-Christian races, without the compulsory teaching of the Christian religion, and this subject is to be considered further at the next conference. Among the appendices is a report of the Conference on Bilingualism, convened by the President of the Board of Education. The discussion of this question by representatives of South Africa, Canada, the India Office, Scotland, Wales, and Malta, brought clearly into view the desirability of bringing into the common stock the varied knowledge and experience of administrators under diverse conditions.

But the success of the conference rests upon its treatment of the urgent administrative problems indicated in our six items of summarised agenda, especially in regard to the last. Much credit is due to Dr. Frank Heath, as director, and his staff at the Special Inquiries Office. Their activity has been even more productive than appeared from Mr. Runciman's address (*vide* NATURE, *loc. cit.*), as the interchange of officials, as well as of official memoranda, has been facilitated, and the difficulties of mutual recognition of teachers' certificates are approaching solution. The main outcome of the conference is the extension of the work of Dr. Heath's department. If the unanimous and weighty recommendations of the conference are carried into effect, the Office of Special Inquiries and Reports will perform the functions of an Imperial Education Bureau. The machinery by which these functions are to be performed, the provision for the continuity of the conference, modes of cooperation of the several education departments of the Empire, have all been made the subject of definite proposals of a practical character. From these, which will be found on pp. 12 to 18 of the report, we quote the penultimate recommendation:—

"That the several Education Departments of the Empire should publish, each for their own part of the Empire, the following monographs in the order named:—(a) the curricula of schools for general education; (b) the training of teachers for schools giving general education; (c) the laws of compulsory attendance and their working; (d) the general education of children in sparsely populated areas; and (e) the medical inspection of schools for general education."

G. F. DANIELL.

#### THE ENDOWMENT OF HOME SCIENCE.

IT was announced on Friday last (the Queen's birthday) that a sum of 50,000l. had been subscribed for the endowment of "home science" in connection with the Women's Department of King's College, and that her Majesty had graciously allowed her name to be associated with a new hostel to be erected at a cost of 20,000l. Another 20,000l. is to be used for building and equipping laboratories, and it is hoped to supplement the remaining 10,000l. so that the endowment for salaries and current expenses may be 60,000l.